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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,850	04/02/2001	Simon Jacobs	500744.01	9966

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EXAMINER
BOYCE, ANDRE D

ART UNIT	PAPER NUMBER
3623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	09/824,850	JACOBS ET AL.
	Examiner	Art Unit	
	Andre Boyce	3623	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-6,12,14-19,22-24,30 and 32-37* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-6,12,14-19,22-24,30 and 32-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *1/22/07*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This Final office action is in response to Applicant's amendment filed January 16,

2007. Claims 4-6, 12, 14-19, 22-24, 30 and 32-37 are pending.

2.   Applicant's arguments filed January 16, 2007 have been fully considered but they

are not persuasive.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 4-6, 12, 14-19, 22-24, 30 and 32-37 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Lesaint et al (USPN 6,578,005), in view of Babayev et al

(USPN 5,615,121).

As per claim 4, Lesaint et al disclose a method for finding an opening in which to

fit an order in a schedule (provisional generation system 30/31 used to program real-

time modifier 40 to allocate tasks to technicians, column 11, lines 3-7), comprising:

computing an amount of free time required in a shift to fit the order (estimated time

of completion, which includes the estimated time of arrival plus the duration of the

task, column 18, lines 56-59) by calculating a travel time between a first activity and

a second activity (i.e., t = journey time between two tasks, column 13, lines 51-54),

calculating a difference travel time defined as a result of a subtraction of the travel

time between the first activity and the second activity and the travel time of the order

and the second activity (i.e., travel from a task inserted into a schedule used in

determining whether insertion may be made, wherein the cost of the revised

schedule is compared with the best existing value, column 22, lines 58-60), further

calculating a job time defined as the time that the order will take to be performed in

the shift (estimated time of completion of the task, column 18, lines 56-57), and

summing the travel time, the difference travel time, and the job time (estimated time

of completion, including time to complete the task and estimated time of arrival,

column 18, lines 56-59); creating a schedulable time block from a virtual free time

block valid position, (wherein the task may be fitted, column 22, lines 48-51),

wherein the schedulable time free block includes a primary block, zero or more

expansion blocks, and zero or more load blocks (i.e., allowable margins, including

deallocation and movement of a task, column 22, lines 51-55, column 23, lines 16-

28); examining the primary block, wherein the primary block is a candidate to fit the

order if a duration of the primary block, excluding at least one break, is greater than

or equal to the amount of free time required in the shift to fit the order (pre-scheduler

30 calculates time the technician is next available and position each break at its

earliest possible start time, column 11, lines 50-54 and 64-65), where the primary

block is not a candidate, computing extra time by relocating assigned orders earlier

or later in time in a portion of the shift, the computation of extra time including

computing an amount of time that the portion of the shift can be relocated by

aggregating a number of virtual free time blocks in the portion of the shift (i.e., a

position is examined to see if a task can be fitted, wherein the tour in the gap must

be big enough to include the task or, if not, it must be possible to delay all

subsequent tasks in order to create a gap large enough to insert the task, column

22, lines 31-39); and creating at least one opening in the shift from the schedulable

time block (i.e., allocation of tasks to technicians, column 11, lines 3-7). Lesaint

does not explicitly disclose presenting to a customer at least one option of fitting the

order in the schedule to perform a desired service. Babayev et al disclose if the

customer preferred time interval cannot be accommodated, then an alternative

appointment time may be provided, relatively close to the preferred time interval

(column 4, lines 45-50). Both Lesaint et al and Babayev disclose tools for

scheduling tasks, wherein orders are received from customers, therefore it would

have been obvious to one having ordinary skill in the art at the time the invention

was made to include presenting to a customer at least one option of fitting the order

in the schedule to perform a desired service in Lesaint et al, as seen in Babayev et

al, as an efficient manner of receiving and distributing customer orders to the correct

technician in Lesaint et al, thereby improving customer service.

As per claim 5, Lesaint et al disclose generating a list of shifts from a window

defined over a set of shifts of a worker (i.e., optimizing system 31 may move tasks

within their time windows and insert tasks before, between, or after them, column 16,

lines 12-14).

As per claim 6, Lesaint et al disclose generating a list of virtual free time blocks from a shift of a worker (i.e., scheduling the tour of the technician, column 10, lines 26-30).

As per claim 12, Lesaint et al disclose computing the amount of time that the portion of the shift must be shifted, defined as a result of a subtraction of the amount of free time required in the shift to accommodate the order and a time available in the virtual free time block (i.e., pre-scheduler 30 calculates the time the technician is next available, using expected duration plus travel time, column 11, lines 50-54).

As per claim 14, Lesaint et al disclose computing the extra time by relocating a portion of the shift to later in time in the shift (i.e., calculating the earliest and latest that each task may be started, when attempting to add tasks to the tour, column 11, lines 38-41, wherein the primary block is a candidate to fit the order if the extra time plus the duration of the primary block is greater than or equal to the amount of free time required in the shift to fit the order (i.e., calculation of the time the technician is next available, including duration of the activity plus travel time, column 11, lines 51-54), and updating the at least one expansion block if the primary block is a candidate (i.e., working out the earliest and latest time tasks may be started, column 11, lines 38-41).

As per claim 15, Lesaint et al disclose computing extra time by relocating a portion of the shift to earlier in time in the shift (i.e., bringing forward the task a amount of time, column 17, lines 26-30), if the act of executing the act of computing the extra time by relocating a portion of the shift to later in time and the act of

examining the primary block determine that the primary block is not a candidate (i.e.,

delaying a task the same amount of time as bringing another task forward, column

17, lines 30-35), wherein the primary block is a candidate to fit the order if the extra

time plus the duration of the primary block is greater than or equal to the amount of

free time required in the shift to fit the order (i.e., equal to the shift in time), and

updating the at least one expansion block if the primary block is a candidate (i.e.,

updating of tasks that improves the cost function, column 17, lines 35-38).

As per claim 16, Lesaint et al disclose eliminating the virtual free time block from

further consideration if the act of computing the extra time by relocating a portion of

the shift to earlier in time in the shift and the act of examining the primary block

determine that the primary block is not a candidate (i.e., the cost of moving the task

forward is a greater cost then delaying the subsequent task, thus no move, column

17, lines 26-30).

As per claim 17, Lesaint et al disclose checking a load limit, including adding the

amount of free time required in the shift to fit the order to a current load of the shift to

define a new load (i.e., position is examined to see if the task can be fitted into the

position, wherein the tour gap must be big enough to include the task, or to delay all

subsequent tasks, column 22, lines 35-39), and wherein checking includes

comparing the new load against the load limit (i.e., all tours are examined, until valid

position is found, column 22, lines 40-42).

As per claim 18, Lesaint et al disclose reducing a total load of the shift by finding

at least one virtual free time blocks to be removed (i.e., delay of all subsequent tasks

in order to create a gap large enough to insert the task, column 22, lines 35-39),

wherein the act of reducing executes an act of adding the at least one virtual free

time block to be removed (i.e., time block created by delay of subsequent tasks),

and updating the at least one load block if the act of finding finds at least one virtual

free time block to be removed (i.e., task inserted into schedule and revised cost

calculated, column 22, lines 61-63).

As per claim 19, Lesaint et al disclose eliminating the virtual free time block if the

act of reducing fails to reduce the total load of the shift to fit the order (i.e., cost of

revised schedule is compared against cost of best existing value, column 22, lines

63-66).

Claims 22-24, 30, 32-37 are rejected based upon the rejection of claims 4-6, 12,

14-19, respectively, since they are the computer readable medium claims

corresponding to the method claims.

Response to Arguments

5.   In the Remarks, Applicant argues that the difference travel time disclosed by

Lesaint is not the same as the difference travel time recited in the claims, since

Lesaint only discloses one part of the difference travel time. The Examiner

respectfully disagrees. Lesaint discloses that the if the technician already has tasks

scheduled in his tour then the travel time will be from the latest position to the task

(column 13, lines 39-41). Moreover, Lesaint discloses travel from a task inserted

into a schedule used in determining whether insertion may be made (column 22,

lines 58-60), wherein the cost of the revised schedule, which includes the schedule with the new travel time, t(n-c), is compared with the best existing value, which inherently includes the travel time between the existing orders, i.e., t(b-c), thus necessarily calculating a difference travel time, via the comparison of the costs of the schedules (column 22, lines 61-66). As such, Lesaint indeed discloses calculating a difference travel time.

Applicant also argues that Lesaint does not disclose computing extra time by aggregating the number of virtual free time blocks by relocating existing orders both later and earlier to create a virtual time block large enough to fit an order. The Examiner respectfully disagrees with Applicant's analysis and submits that Applicant's claim language includes "computing extra time by relocating assigned orders earlier or later in time in a portion of the shift" (emphasis added). As such, contrary to Applicant's assertion, the claim language does not require relocating assigned orders both later and earlier to create a virtual time block large enough to fit an order, therefore Lesaint indeed teaches the limitation.

Conclusion

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply

expire later than SIX MONTHS from the mailing date of this final action.
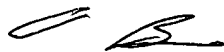
7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andre Boyce whose telephone number is (571) 272-

6726. The examiner can normally be reached on 9:30-6pm M-F.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-

8300.

Information regarding the status of an application may be obtained from the

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272-1000.

adb
April 1, 2007

ANDRE BOYCE
PATENT EXAMINER
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